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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KATHRYN BARDSLEY, BRYAN SCOTT DELCHAMPS, ZHIHUA LIU, NEELIMA MANNAVA, and HOU WU[1]

Appeal 2014-003620
Application 13/078,526
Technology Center 1600

Before DEMETRA J. MILLS, FRANCISCO C. PRATS, and ROBERT A. POLLOCK, *Administrative Patent Judges*.

POLLOCK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1 and 4–15. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

STATEMENT OF THE CASE

Appellants' invention relates to the use of 7-0-rutinoside-containing flavone glycoside warming enhancers of the general Formula I in combination with a warming compound "to enhance or modify the warming effect of orally consumable compositions, such as foodstuff, chewing gums,

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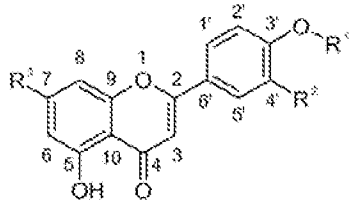
[1] Appellants identify the real party-in-interest as International Flavors & Fragrances Inc. App. Br. 2.

dental and oral hygiene products, and medicinal products." Spec. 1:6–8, 2:2–13.

According to the Specification, known warming compounds include capsicum tincture, capsaicin, vanillyl ethyl ether, vanillyl butyl ether, vanillyl pentyl ether, vanillyl hexyl ether, ginger extract, gingeron, and black or white pepper extracts. *Id.* at 1:11–22. "[T]hese warming compounds may cause irritation when used in high amount, [and may] exhibit short-duration effect or insufficient strength when used in low amount." *Id.* at 22–23. The 7-0-rutinoside warming enhancers, however, "have unexpected properties of enhancing and modifying warming effect in flavors" and are, thus, beneficially used in combination with warming compounds. *See id.* at 5:1–2. "For example, the compounds may be employed to enhance the perceived warming effect of capsicum extract since a large amount of capsicum extract may cause adverse effect such as irritation." *Id.* at 5:8–14.

Claims 1, 5, and 14 are illustrative:

> 1. A warming composition comprising a warming compound and a warming enhancer of Formula I:
>
> 
>
> Formula I
>
> wherein R^1 is selected from the group consisting of H and CH_3;
>
> R^2 is selected from the group consisting of H and OH; and
>
> R^3 represents 7-O-rutinoside.

> 5. The warming composition of claim 1, wherein the warming enhancer is acacetin 7-0-rutinoside.
>
> 14. A warming composition comprising a warming compound and a warming enhancer, wherein the warming enhancer is selected from the group consisting of:
>
> luteolin 7-0-rutinoside;
>
> acacetin 7-0-rutinoside; and
>
> a mixture thereof.

The Examiner rejects the claims on appeal as follows:

I. Claims 1, 4, and 6–15 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Kumamoto[2] and Honma.[3]

II. Claims 1 and 5 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Kumamoto and Martínez-Vázquez.[4]

I

We have reviewed Appellants' contentions that the Examiner erred in rejecting claims 1, 4, and 6–15 as unpatentable over the combination of Kumamoto and Honma. App. Br. 4–6; Reply 2–3. With respect to this rejection, we disagree with Appellants' contentions and adopt the findings concerning the scope and content of the prior art set forth in the Examiner's Answer. For emphasis, we highlight and address the following:

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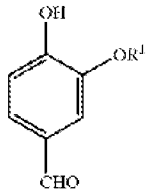
[2] Kumamoto et al., US 6,838,106 B2, published Jan. 4, 2005 ("Kumamoto").
[3] Honma et al., JP 2006-340639, published Dec. 21, 2006 ("Honma") (English language translation).
[4] Martínez-Vázquez et al., *Analgesic and Antipyretic Activities of an Aqueous Extract and of the Flavone Linarin of Buddleia cordata*, 62 Planta Med. 137–140 (1996) ("Martínez-Vázquez").

Findings of Fact

FF1. Kumamoto discloses "a warming composition for food and drink or for oral care preparations which produces an excellent and long-lasting warming effect and causes no or little irritation to mucous membranes." Kumamoto, Abstract. The warming composition can be incorporated into a flavor composition using "any flavorings known in the art for use in foods, beverages or oral care products." *Id.* at 5:9:–13; *see also id.* at 5:14–52 (listing exemplary flavorings including citrus, fruit, milk, meat, fish, and vegetal).

FF2. In one embodiment, the warming composition comprises a warming agent, a cooling agent, and a compound represented by the following Formula I:



wherein R^1 is hydrogen, methyl, or ethyl. *See id.* at 2:1–16, 20–24.

FF3. Preferred warming agents include "vanillyl ethyl ether, vanillyl propyl ether, vanillyl butyl ether, vanillyl pentyl ether, vanillyl hexyl ether, gingeron, capsicum tincture, and ginger extract." *Id.* at 4:44–49.

FF4. Preferred cooling agents include menthyl succinate, Japanese mint (*Mentha arensis*) oil, peppermint oil, menthone, and spearmint oil. *Id.* at 3:45–64.

FF5. Honma discloses "[a] flavor decrease–suppressing agent compris[ing] luteolin 7-O-rutinoside in a solvent extract of a plant of the genus Mentha of the family Labiatae." Honma, Abstract.

> According to Honma, the active ingredient, luteolin 7-O-rutinoside, "can suppress decrease of flavor of foods, etc., remarkably to light and also to heat, oxygen, etc., for a long period," but "do[es] not affect original flavors" of the foodstuffs. *Id.* at Abstract, ¶¶ 9, 40.

Analysis

To summarize the Examiner's position, it would have been obvious to combine Honma's flavor deterioration inhibitor, luteolin-7-O-rutinoside, with Kumamoto's three-component warming composition for the purpose of inhibiting the degradation of flavors present in foodstuffs containing Kumamoto's composition. *See* Ans. 4–5, 11–13. Appellants do not argue individual claims separately, therefore we select claim 1 as representative.

Appellants appear to argue that one of ordinary skill would not have had reason to combine the cited teachings because Kumamoto teaches a warming effect without addressing flavor deterioration, whereas Honma "focus[es] on using luteolin 7-O-rutinoside as a flavor deterioration inhibitor with no alteration in flavor." App. Br. 5–6; *see* Reply Br. 3.

We do not find Appellants' argument persuasive. Rather, we accept the Examiner's conclusion that one of ordinary skill in the art would have found it obvious to combine the luteolin 7-O-rutinoside of Honma with the warming flavoring composition to protect and prolong the flavors of the composition. Ans. 12; *see id.* at 14 ("[Because Kumamoto] teaches a warming flavoring composition suitable for foods, foodstuffs, and oral care products, one of ordinary skill in the art, in consideration of Honma's teaching that flavor deterioration is known to occur due to exposure to heat, light, [] and oxygen, would have been motivated to have combined the

flavor deterioration inhibitor, luteolin-7-O-rutinoside, with the warming flavoring composition taught by Kumamoto.").

Appellants point to the January 18, 2013, Declaration under 37 C.F.R. § 1.132 of Kathryn Bardsley ("Bardsley") as evidence that "luteolin 7-O-rutinoside and a warming compound work together in an unexpected and fruitful manner." App. Br. 4–5 (emphasis removed). First, with respect to Appellants' argument that Bardsley "shows that the flavor-enhancing and modifying effect of the claimed compounds is present only in a warming composition, not just any flavor compositions" (App. Br. 4), we note that 1) Kumamoto expressly discloses a warming composition, and 2) the Examiner reasonably finds that luteolin 7-O-rutinoside as taught by Honma inherently has a warming enhancement property (*see* Ans. 5).

Second, we note that the Bardsley Declaration only examines the effect of luteolin 7-O-rutinoside in connection with a single warming compound, capsicum oleoresin. *See* Bardsley, Exhibit A. Because the claims are not limited to any particular warming composition—and the Specification reports that many such compounds are known (*see* Spec. 1: 11–22)—we conclude that Appellants' evidence is insufficient as not commensurate with the scope of the invention claimed. *See In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978) ("Establishing that one (or a small number of) species gives unexpected results is inadequate proof [because] . . . objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.").

Third, Bardsley does not properly address the substance of the instant rejection. "[W]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with

the closest prior art," in this case, Kumamoto. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991). Here, rather than assess the effect of luteolin 7-O-rutinoside on the warming compound/cooling compound/Formula I composition of Kumamoto, Bardsley assesses the effect of a luteolin 7-O-rutinoside on a warming compound alone.

In view of the above, we affirm the rejection.

II

With respect to Appellants' contention that the Examiner erred in rejecting claims 1 and 5 as unpatentable over the combination of Kumamoto and Martínez-Vázquez (App. Br. 7–8; Reply 4–5), we consider the following:

Findings of Fact

FF6. Martínez-Vázquez discloses that the flavonoid glycoside, linarin (acacetin 7-O-rutinoside)[5] has "significant and dose-dependent analgesic and antipyretic activities . . . similar to that showed by morphine sulfate." Martínez-Vázquez, Abstract. With respect to antipyretic activity, acacetin 7-0-rutinoside presents a more potent hyperthermia reducing effect than acetaminophen. *See id.* at 139, Table 3, 140.

Analysis

Appellants do not argue claims 1 and 5 separately, therefore we select claim 1 as representative.

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[5] There is no dispute that linarin is acacetin 7-O-rutinoside. *See* App. Br. 14; Ans. 8.

According to the Examiner,

> One of ordinary skill in the art at the time of the invention would have been motivated to have added acacetin 7-O-rutinoside, or linarin, to the warming composition taught by Kumamoto et. al., because Kumamoto et. al. teaches a warming flavoring composition comprised of a cooling agent; a compound of formula I; and a warming compound for providing an enhanced warming effect when presented in formulations such as food, oral care products, and foodstuffs, while Martinez-Vazquez et. al. teaches [acacetin 7-O-rutinoside] as an anti-pyretic.

Ans. 15.

The Examiner finds that antipyretics such as acacetin 7-O-rutinoside "lower[s] the body temperature, thus meeting the limitation of an agent which provides a cooling effect." *Id.* at 15–16; *see id.* at 9 ("Anti-pyretic agents dilate the blood vessels near the surface of the skin, thereby providing a cooling effect by increasing heat loss."). As we understand the rejection, the Examiner reasons that one of ordinary skill in the art would have found it obvious to use acacetin 7-O-rutinoside as the cooling agent in the composition taught by Kumamoto, "with a reasonable expectation that the resulting composition would have provided an appreciable and long-lasting warming effect." *Id.* at 16.

Appellants respond that one of ordinary skill in the art would recognize that the antipyretic (i.e., fever-reducing) activity taught by Martínez-Vázquez is distinctly different from the cooling effect in flavor contemplated by Kumamoto. App. Br. 7. While we do not comment on the underlying physiology of antipyretics as compared to the cooling taste of, e.g., peppermint oil as contemplated by Kumamoto (*see* FF4), we note that the Examiner has not shown that they have similar physiological effects or

that one of skill in the relevant art would have reasonably substituted one for the other. Accordingly, we agree with Appellants that the Examiner has failed to establish a reason that one of ordinary skill in the art would have used acacetin 7-O-rutinoside as the cooling agent in Kumamoto. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

The rejection is reversed.

SUMMARY

I. We *affirm* the rejection of claims 1, 4, and 6–15 under § 35 U.S.C. 103(a) as obvious over the combination of Kumamoto and Honma.

II. We *reverse* the rejection of claims 1 and 5 under § 35 U.S.C. 103(a) as obvious over the combination of Kumamoto and Martínez-Vázquez.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART